



THE STORY OF RECYCLING - PART TWO: **COLLECTION, PROCESSING, AND MARKETS**

Brought to you by the Education Committee

Last month we talked about where plastics come from. This month we will look at recycling markets.

Technically, all thermoplastics are recyclable. In practice, however, very few are actually recycled. Why? Recycling requires three things:

- 1) Cost-effective collection and processing systems;
- 2) A market, with a salable end product;
- 3) A reliable quantity and quality of material - to make it economical to collect and process the material and support a market.

It's not easy to meet these three requirements, which present a sort of chicken and egg scenario. Let's look at each of these factors in a bit more depth to see if we can actually sort out which needs to come first....

Collection and Processing

What types of plastics are collected via what sort of program varies by locale. Most materials collected at the curb (or elsewhere) go to a local Materials Recovery Facility, or MRF, for processing. (Industrial sources of plastic, particularly plastic film, frequently skip this step.) Different MRFs have different standards for what they accept, depending in part on their sorting process. Some may want plastics pre-sorted;, others can accept mixed plastics;, and now, more and more recyclers are taking all material mixed together in a single stream--although single stream recycling can make it more difficult to capture all of the bottles. There is a tendency for some plastic, especially single serve bottles, to end up in the paper bales of a single stream MRF.

At the MRF, the plastic is sorted by type, compressed into bales, and then trucked to either a plastic broker or reclaimer. If the bales are too contaminated – with the wrong type of plastic, other recyclables, or garbage--the loads might be rejected, or the MRF might get a lesser price for the materials.

Brokers resell or export the bales as is. Reclaimers of rigid plastics generally open the bale, and sort, grind (into flake) and wash the plastic. Some reclaimers pelletize as well. Some reclaimers sell the pellet or flake to an end-user that uses the pellet or flake to manufacture a new product. Other reclaimers are vertically integrated and use the clean plastic themselves.

In the U.S. there are some 1,600 recyclers of post-consumer plastics. Of these, the majority (1300) are sort-and-bale facilities, while the rest are re-processors.

Markets

There are markets for plastics all over the continent and beyond. To find a market for baled plastic please check out NWPasticsMarkets.com. A key concern for plastic recycling today is the growing demand in Asia for many types of recycled plastics. Currently, Asian markets are buying so much PET there is not enough left to support domestic markets. Asia is able to buy the PET at a higher price than domestic buyers because they have lower costs to convert it into new feedstock. U.S. companies are not able to outbid Asian markets, as they cannot pass on extra processing costs and still meet competitive markets. In 2003, baled bottles were priced at about 10 cents a pound; this year that price has doubled.

Another concern for recycled plastic markets is competition with virgin product, especially with the governmental subsidies on virgin resins.

A Reliable Quantity and Quality of Material

The growing demand for PET in Asia is an example of the importance of quantity of material to keeping reliable markets. There must be a consistent and large supply of quality material to develop and sustain a market. To get this supply, recycling programs need to be as easy for the consumer as possible. The American Plastic Council tries to boost collection and supply via their “All Plastic Bottles” recycling program. (*How does it work?*) Single stream recycling can also increase the supply of plastic. .

Plastic bottle recycling programs are available in many communities – more than 20,000 across the country, representing 80 percent of the population. PET and HDPE bottles are the most commonly recycled plastics. HDPE recycling is on the increase. However, PET’s recycling rate has been dropping, due to the increase in single serve bottles that are consumed on the go--away from residential recycling service. More recycling in public places could help capture many of those single serve bottles. And what about plastic tubs? According to the Association of Plastic Recyclers, we have not yet reached that critical mass of materials to make plastic tub recycling markets feasible in the US, so for now most tubs are sent to Asia.

In order to stay in business, domestic users of recycled resin need more consistent supplies of recycled product.

The Association of Post-Consumer Plastic Recyclers fears that continued off-shore marketing of plastics could potentially cause the North American plastic recycling infrastructure to collapse.

Users of recycled resin say that supply has to come first, or nothing else can follow. Next month we will look at what those users are making with the recycled resin....